PCTEST

PCTEST ENGINEERING LABORATORY, INC.

6660-B Dobbin Road, Columbia, MD 21045 USA Tel. 410.290.6652 / Fax 410.290.6554 http://www.pctestlab.com



CERTIFICATE OF COMPLIANCE FCC Part 22 Certification

Applicant Name: Sanyo Fisher Company 21605 Plummer Street Chatsworth, CA 91311 USA Date of Testing:
February 28, 2007
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:

0702230103.AEZ

FCC ID: AEZA5527SA

APPLICANT: SANYO FISHER COMPANY

Application Type: Certification

FCC Classification: Licensed Non-Broadcast Transmitter Held to Ear (TNE)

FCC Rule Part(s): §2; §22(H)

EUT Type: Cellular CDMA Phone

Model(s): A5527SA

Tx Frequency Range: 824.70 - 848.31MHz (Cell. CDMA) **Max. RF Output Power:** 0.278 W ERP Cell. CDMA (24.44 dBm)

Emission Designator(s): 1M27F9W (CDMA)

Test Device Serial No.: identical prototype [S/N: 2DF00132]

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Grant Conditions: Power output listed is ERP for Part 22.

PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.





FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 1 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		raye i 01 20



TABLE OF CONTENTS

FCC F	PART 2	22 MEASUREMENT REPORT	3
1.0	INTE	RODUCTION	4
	1.1	MEASUREMENT PROCEDURE	4
	1.2	SCOPE	4
	1.3	TESTING FACILITY	4
2.0	PRC	DDUCT INFORMATION	5
	2.1	EQUIPMENT DESCRIPTION	5
	2.2	EMI SUPPRESSION DEVICE(S)/MODIFICATIONS	5
3.0	DES	SCRIPTION OF TESTS	6
	3.1	OCCUPIED BANDWIDTH EMISSION LIMITS	6
	3.2	CELLULAR - BASE FREQUENCY BLOCKS	_
	3.3	CELLULAR - MOBILE FREQUENCY BLOCKS	6
	3.4	SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL	7
	3.5	RADIATED SPURIOUS AND HARMONIC EMISSIONS	
	3.6	FREQUENCY STABILITY / TEMPERATURE VARIATION	7
4.0	TES	ST EQUIPMENT CALIBRATION DATA	8
5.0	SAM	IPLE CALCULATIONS	9
6.0	TES	ST RESULTS	10
	6.1	EFFECTIVE RADIATED POWER OUTPUT DATA	11
	6.2	CELLULAR CDMA RADIATED MEASUREMENTS	12
	6.3	FREQUENCY STABILITY (CELLULAR CDMA)	15
7.0	PLO	DT(S) OF EMISSIONS	17
8.0	CON	NCLUSION	23
EXHIE	BIT A -	- TEST SETUP PHOTOGRAPHS	24
EXHIE	BIT B -	- INTERNAL PHOTOGRAPHS	25
		- EXTERNAL PHOTOGRAPHS	

FCC ID: AEZA5527SA	PCTEST.	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 2 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 2 01 20



MEASUREMENT REPORT



FCC Part 22

A. §2.1033 General Information

APPLICANT: Sanyo Fisher Company
APPLICANT ADDRESS: 21605 Plummer Street
Chatsworth, CA 91311

TEST SITE: PCTEST ENGINEERING LABORATORY, INC. **TEST SITE ADDRESS:** 6660-B Dobbin Road, Columbia, MD 21045 USA

 FCC RULE PART(S):
 §2; §22(H)

 MODEL NAME:
 A5527SA

 FCC ID:
 AEZA5527SA

FCC CLASSIFICATION: Licensed Non-Broadcast Transmitter Held to Ear (TNE)

EMISSION DESIGNATOR(S): 1M27F9W (CDMA)

MODE: Cellular CDMA

FREQUENCY TOLERANCE: ±0.00025 % (2.5 ppm)

Test Device Serial No.: 2DF00132 ☐ Production ☐ Production ☐ Engineering

DATE(S) OF TEST: February 28, 2007 **TEST REPORT S/N:** 0702230103.AEZ

A.1 Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab. located in Columbia, MD 21045, U.S.A.



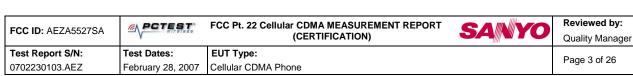
(NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.



 PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.

Technology (NIST) under the National Voluntary Laboratory Accreditation Program

- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (IC-2451) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

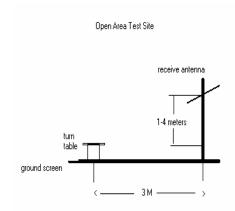




1.0 INTRODUCTION

1.1 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (see Figure 1-1). The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.



Deviation from Measurement Procedure.....None

Figure 1-1. Diagram of 3-meter outdoor test range

1.2 Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

1.3 Testing Facility

These measurements were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia. Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2003 on January 27, 2006 and Industry Canada.

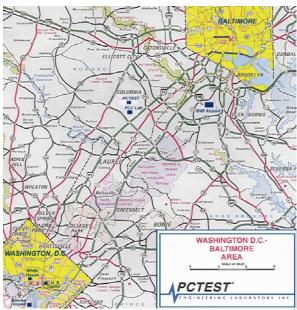


Figure 1-2. Map of the Greater Baltimore and Metropolitan Washington, D.C. area.

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 4 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 4 01 20
@ 2007 DCTEST Engineering I	2007 DCTEST Engineering Leberston, Inc.			DEV/63C

© 2007 PCTEST Engineering Laboratory, Inc.



2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Sanyo Cellular CDMA Phone FCC ID: AEZA5527SA**. The EUT consisted of the following component(s):

Trade Name / Model	FCC ID	Description
Sanyo / Model: A5527SA	AEZA5527SA	Cellular CDMA Phone

Table 2-1. EUT Equipment Description

Mode	FCC Rule Part	Frequency [MHz]	Notes	
Cellular CDMA	22	824.70 - 848.31MHz (Cell. CDMA)	This report contains data pertaining only to the Cellular CDMA transmitter.	
Receiver / Digital Device	15B	N/A	Data can be found in a separate test report under the same FCC ID.	

Table 2-2. Supported EUT Modes

2.2 EMI Suppression Device(s)/Modifications

EMI suppression device(s) added and/or modifications made during testing.

None

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 5 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		rage 3 of 20



3.0 DESCRIPTION OF TESTS

3.1 Occupied Bandwidth Emission Limits §2.1049, 22.917(a)

- a. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB.
- b. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
- c. When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.
- d. The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

3.2 Cellular - Base Frequency Blocks



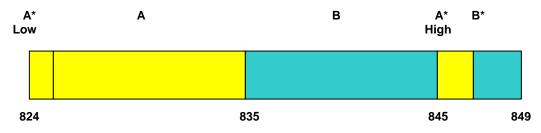
BLOCK 1: 869 - 880 MHz (A* Low + A)

BLOCK 3: 890 - 891.5 MHz (A* High)

BLOCK 2: 880 - 890 MHz (B)

BLOCK 4: 891.5 - 894 MHz (B*)

3.3 Cellular - Mobile Frequency Blocks



BLOCK 1: 824 - 835 MHz (A* Low + A)

BLOCK 3: 845 - 846.5 MHz (A* High)

BLOCK 2: 835 – 845 MHz (B) BLOCK 4: 846.5 – 849 MHz (B*)

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 6 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 0 01 20



3.4 Spurious and Harmonic Emissions at Antenna Terminal §2.1051, 22.917(a); RSS-129 (8.1.1)

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

3.5 Radiated Spurious and Harmonic Emissions §2.1053, 22.917(a); RSS-129 (8.1.1)

Spurious and harmonic radiated emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55, with "All Up" power control bits.

3.6 Frequency Stability / Temperature Variation §2.1055, 22.355; RSS-129 (9.2.1)

The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Specification – The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency.

Time Period and Procedure:

- 1. The carrier frequency of the transmitter and the individual oscillators is measured at room temperature (20°C to provide a reference).
- 2. The equipment is subjected to an overnight "soak" at -30°C without any power applied.
- 3. After the overnight "soak" at -30°C (usually 14-16 hours) the equipment is turned on in a "standby" condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter and the individual oscillators is made within one minute after applying power to the transmitter.
- 4. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. At least a period of one half-hour is provided to allow stabilization of the equipment at each temperature level.

FCC ID: AEZA5527SA	PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 7 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		raye / Ul 20



4.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Test Equipment Ca	libration is traceable to the National Institute of S	Standards and	I echnology	y (NIST).	
Manufacturer	Model / Equipment	Calibration Date	Cal Interval	Calibration Due	Serial No.
Agilent	E4404B/E4407B ESA Spectrum Analyzer	04/20/06	Annual	04/20/07	US39210313
Agilent	E5515C Wireless Communications Test Set	07/27/06	Annual	07/27/07	GB41450275
Agilent	E5515C Wireless Communications Test Set	10/06/06	Annual	10/06/07	GB43193972
Agilent	E4432B ESG-D Series Signal Generator	08/08/06	Annual	08/08/07	US40053896
Agilent	8648D (9kHz-4GHz) Signal Generator	10/01/06	Annual	10/01/07	3613A00315
Agilent	E5515C Wireless Communications Test Set	10/26/06	Biennial	10/25/08	GB46310798
EMCO	Model 3115 (1-18GHz) Horn Antenna	08/24/06	Biennial	08/23/08	9203-2178
EMCO	Model 3115 (1-18GHz) Horn Antenna	08/25/06	Biennial	08/24/08	9704-5182
Gigatronics	8657A Universal Power Meter	04/07/06	Annual	04/07/07	8650319
Gigatronics	80701A (0.05-18GHz) Power Sensor	04/11/06	Annual	04/11/07	1833460
Rohde & Schwarz	NRVS Power Meter	06/01/05	Biennial	06/01/07	835360/079
Rohde & Schwarz	NRV-Z53 Power Sensor	06/01/05	Biennial	06/01/07	846076/007
Rohde & Schwarz	CMU200 Base Station Simulator	11/08/06	Annual	11/08/07	107826
Rohde & Schwarz	CMU200 Base Station Simulator	07/26/06	Annual	07/26/07	833855/010
Rohde & Schwarz	CMU200 Base Station Simulator	04/20/06	Annual	04/20/07	836371/079
Agilent	HP 8566B (100Hz–22GHz)	12/21/06	Annual	12/21/07	3638A08713
Agilent	E4448A (3Hz-50GHz)	09/22/06	Annual	09/22/07	US42510244
Gigatronics	8651A (50MHz-18GHz)	07/28/06	Annual	07/28/07	1834052
Gigatronics	80701A (0.05-18GHz) Power Sensor	08/04/06	Annual	08/04/07	1835299
Agilent	HP 85650A Quasi-Peak Adapter	12/21/06	Annual	12/21/07	2043A00301
Agilent	HP 8449B (1-26.5GHz) Pre-Amplifier	12/12/06	Annual	12/12/07	3008A00985
Agilent	HP 11713A Attenuation/Switch Driver	12/12/06	Annual	12/12/07	N/A
Agilent	HP 85685A (20Hz-2GHz) Preselector	12/12/06	Annual	12/12/07	N/A
Agilent	HP 8566B Opt. 462 Impulse Bandwidth	12/12/06	Annual	12/12/07	3701A22204
EMCO	3115 (1-18GHz) Horn Antenna	04/04/05	Biennial	04/04/07	9205-3874
Compliance Design	A100 Roberts Dipoles	08/31/05	Biennial	08/31/07	5118
EMCO	Dipole Pair	09/21/06	Biennial	09/20/08	23951
SOLAR	8012-50 LISN (2)	11/18/05	Biennial	11/18/07	0313233, 0310234
Agilent	HP 8901A Modulation Analyzer	06/05/06	Annual	06/05/07	2432A03467
Agilent	HP 8903 B Audio Analyzer	06/01/06	Annual	06/01/07	3011A09025
K&L	11SH10 Band Pass Filter	N/A	Annual	N/A	1300/4000
K&L	11SH10 Band Pass Filter	N/A	Annual	N/A	4000/12000
Agilent	HP 8495A (0-70dB) DC-4GHz Attenuator	N/A		N/A	N/A
-	263-10dB (DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
Pasternack	PE2208-6 Bidirectional Coupler	N/A		N/A	N/A
-	No.165 (30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166 (1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167 (100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A

Table 4-1. Test Equipment

FCC ID: AEZA5527SA	PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 8 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Faye 0 01 20



5.0 SAMPLE CALCULATIONS

Emission Designator

Emission Designator = 1M25F9W

CDMA BW = 1.25 MHz F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data) (Measured at the 99.75% power bandwidth)

Spurious Radiated Emission - Cellular Band

Example: Channel 1013 Cellular CDMA Mode 2nd Harmonic (1649.4 MHz)

The receive analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the receive analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1649.4 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental ERP was 25.501 dBm so this harmonic was 25.501 dBm - (-24.80) = 50.3 dBc.

FCC ID: AEZA5527SA	@ PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 9 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Faye 3 01 20



6.0 TEST RESULTS

Summary

Company Name: <u>Sanyo Fisher Company</u>

FCC ID: <u>AEZA5527SA</u>

FCC Classification: <u>Licensed Non-Broadcast Transmitter Held to Ear (TNE)</u>

Mode(s): <u>Cellular CDMA</u>

FCC Part Section(s)	RSS Section	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MO	DDE (TX)					
2.1049, 22.917(a)	N/A	Occupied Bandwidth	N/A		PASS	Section 7.0
2.1051, 22.917(a)	RSS-129 (8.1.1)	Band Edge / Conducted Spurious Emissions	< 43 + 10log ₁₀ (P[Watts]) at Band Edge and for all out-of- band emissions	CONDUCTED	PASS	Section 7.0
SAR Measurement Procedures for 3G Devices, June '06	N/A	Conducted Power Measurements for 3G Devices	<0.25 dB		PASS	FCC 3G Power Table
22.913(a)(2)	RSS-129 (9.1)	Effective Radiated Power	< 7 Watts max. ERP		PASS	Section 6.1
2.1053, 22.917(a)	RSS-129 (8.1.1)	Undesirable Emissions	< 43 + 10log ₁₀ (P[Watts]) for all out-of-band emissions	RADIATED	PASS	Sections 6.2
2.1055, 22.355	RSS-129 (9.2.1)	Frequency Stability	< 2.5 ppm		PASS	Sections 6.3
RECEIVER MODE	(RX) / DIGITAL EMIS	SIONS				
15.107	RSS-Gen [7.2.2]	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits or < RSS-Gen table 2 limits	LINE CONDUCTED	PASS	Pt. 15B Test Report
15.109	RSS-129 (10(a,d)), RSS-210 (7.3)	General Field Strength Limits (Restricted Bands and Radiated Emissions Limits)	< FCC 15.209 limits or < RSS-Gen limits [Section 6; Table 1]	RADIATED (30MHz-1GHz) (1-25 GHz)	PASS	Pt. 15B Test Report
RF EXPOSURE (SA	AR)					
2.1091 / 2.1093	RSS-102	SAR Test	1.6 W/kg (SAR Limit) 1 mW/cm² (MPE Limit) @ 20 cm	SAR	PASS	SAR Report

Table 6-1. Summary of Test Results

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 10 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		rage 10 01 20



6.1 Effective Radiated Power Output Measurements (ERP) §22.913(a)(2); RSS-129 (9.1)

POWER: "All Up" Bits (Cellular CDMA Mode)

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	ERP [dBm]	ERP [Watts]
824.70	23.800	24.00	-0.20	V	23.80	0.240
836.49	24.440	24.00	0.44	٧	24.44	0.278
848.31	23.210	24.00	-0.79	V	23.21	0.209

Table 6-2. Effective Radiated Power Output Measurements @ 3 meters

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 11 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		raye 110120



6.2 Cellular CDMA Radiated Measurements

§2.1053, 22.917(a): RSS-129 (8.1.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.70 MHz

CHANNEL: 1013

MEASURED OUTPUT POWER: 24.440 dBm = 0.278 W

MODULATION SIGNAL: CDMA (Internal)

DISTANCE: _____ meters

LIMIT: $43 + 10 \log_{10} (W) = 37.44$ dBc

FREQ.	LEVEL @ ANTENNA	SUBSTITUTE ANTENNA	CORRECT GENERATOR	POL	
(MHz)	TERMINALS	GAIN	LEVEL	(H/V)	(dBc)
	(dBm)	(dBi)	(dBm)		
1649.40	-60.14	8.31	-51.83	V	76.3
2474.10	-70.45	9.41	-61.05	V	85.5
3298.80	-69.04	9.55	-59.49	V	83.9
4123.50	-88.91	9.74	-79.18	V	103.6
4948.20	-88.00	10.62	-77.38	V	101.8

Table 6-3. Radiated Spurious Data (Cellular CDMA Mode – Ch. 1013)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 12 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 12 01 20



Cellular CDMA Radiated Measurements (Cont'd) §2.1053, 22.917(a); RSS-129 (8.1.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.49 MHz

CHANNEL: 383

MEASURED OUTPUT POWER: 24.440 dBm = 0.278 W

MODULATION SIGNAL: CDMA (Internal)

DISTANCE: 3 meters

LIMIT: $43 + 10 \log_{10} (W) = 37.44$ dBc

FREQ.	LEVEL @ ANTENNA	SUBSTITUTE ANTENNA	CORRECT GENERATOR	POL	
(MHz)	TERMINALS (dBm)	GAIN (dBi)	LEVEL (dBm)	(H/V)	(dBc)
1672.98	-68.16	8.33	-59.83	V	84.3
2509.47	-71.91	9.45	-62.46	V	86.9
3345.96	-66.87	9.57	-57.30	V	81.7
4182.45	-89.18	9.90	-79.28	V	103.7
5018.94	-87.39	10.61	-76.78	V	101.2

Table 6-4. Radiated Spurious Data (Cellular CDMA Mode - Ch. 383)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

FCC ID: AEZA5527SA	@\PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 13 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 13 01 20



Cellular CDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a); RSS-129 (8.1.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 848.31 MHz

CHANNEL: 777

MEASURED OUTPUT POWER: 24.440 dBm = 0.278 W

MODULATION SIGNAL: CDMA (Internal)

DISTANCE: 3 meters

LIMIT: $43 + 10 \log_{10} (W) =$ 37.44 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-62.98	8.34	-54.64	V	79.1
2544.93	-73.80	9.45	-64.36	V	88.8
3393.24	-64.90	9.59	-55.31	V	79.7
4241.55	-89.23	10.06	-79.18	V	103.6
5089.86	-87.59	10.61	-76.98	V	101.4

Table 6-5. Radiated Spurious Data (Cellular CDMA Mode – Ch. 777)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

FCC ID: AEZA5527SA	PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 14 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 14 01 20



6.3 Frequency Stability (Cellular CDMA) §2.1055, 22.355; RSS-129 (9.2.1)

OPERATING FREQUENCY: 836,490,000 Hz

CHANNEL: 383

REFERENCE VOLTAGE: 3.7 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE	POWER	TEMP	FREQ.	Freq. Dev.	Deviation
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)
100 %	3.70	+ 20 (Ref)	836,489,987	-13	-0.000002
100 %		- 30	836,489,991	-9	-0.000001
100 %		- 20	836,490,017	17	0.000002
100 %		- 10	836,489,992	-8	-0.000001
100 %		0	836,490,022	22	0.000003
100 %		+ 10	836,490,026	26	0.000003
100 %		+ 20	836,489,987	-13	-0.000002
100 %		+ 25	836,490,012	12	0.000001
100 %		+ 30	836,490,023	23	0.000003
100 %		+ 40	836,490,009	9	0.000001
100 %		+ 50	836,490,018	18	0.000002
115 %	4.26	+ 20	836,490,022	22	0.000003
BATT. ENDPOINT	3.40	+ 20	836,490,047	47	0.000006

Table 6-6. Frequency Stability Data (Cellular CDMA Mode – Ch. 383)

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 15 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		rage 13 01 20



Frequency Stability (Cellular CDMA) (Cont'd) §2.1055, 22.355; RSS-129 (9.2.1)

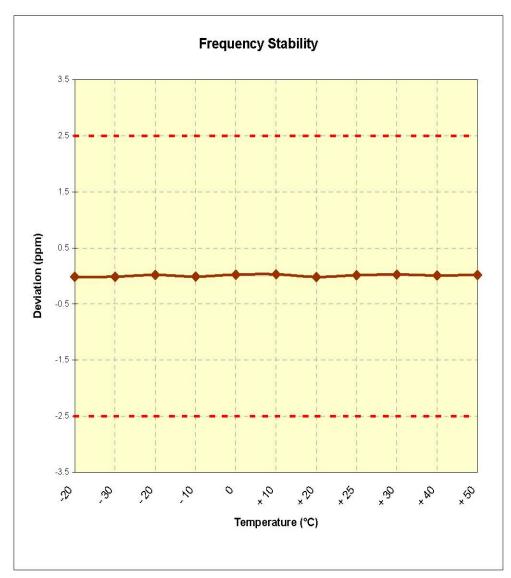
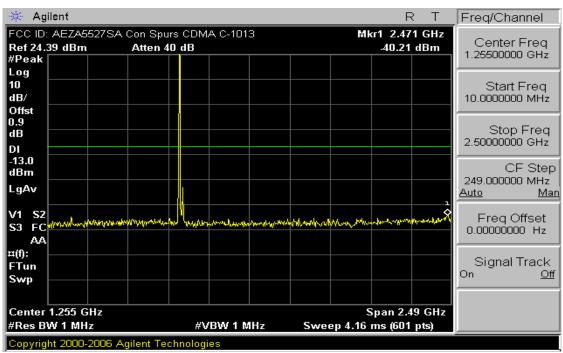


Figure 6-1. Frequency Stability Graph (Cellular CDMA Mode – Ch. 383)

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 16 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		rage 10 01 20



PLOT(S) OF EMISSIONS

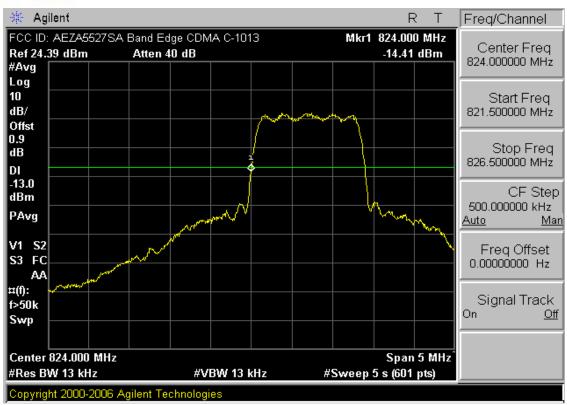


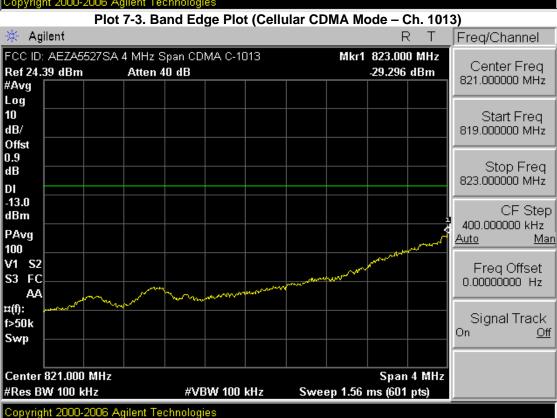
Plot 7-1. Conducted Spurious Plot (Cellular CDMA Mode - Ch. 1013) 🔆 Agilent Freg/Channel Mkr1 7.700 GHz FCC ID: AEZA5527SA Con Spurs CDMA C-1013 Center Frea Ref 24.39 dBm Atten 40 dB -35.52 dBm 6.25000000 GHz #Peak Log 10 Start Freq dB/2.50000000 GHz Offst 0.9 Stop Frea dΒ 10.0000000 GHz DΙ -13.0 CF Step dBm 750.000000 MHz LgAv <u>Auto</u> <u>Man</u> V1 S2 a hat remarked a professor have Freq Offset S3 FC 0.000000000 Hz ДД #(f): Signal Track FTun On <u>Off</u> Swp Center 6.250 GHz Span 7.5 GHz #Res BW 1 MHz #VBW 1 MHz Sweep 12.52 ms (601 pts) Copyright 2000-2006 Agilent Technologies

Plot 7-2. Conducted Spurious Plot (Cellular CDMA Mode - Ch. 1013)

FCC ID: AEZA5527SA	PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 17 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Faye 17 01 20



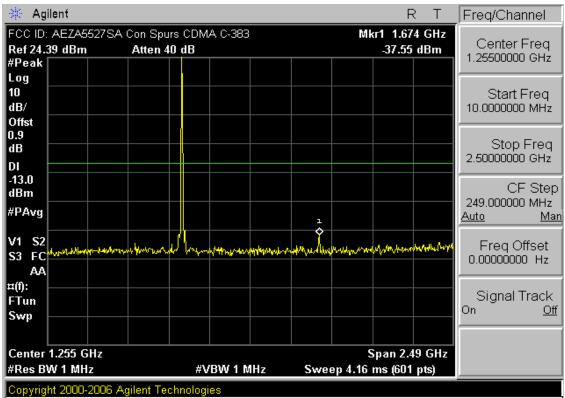


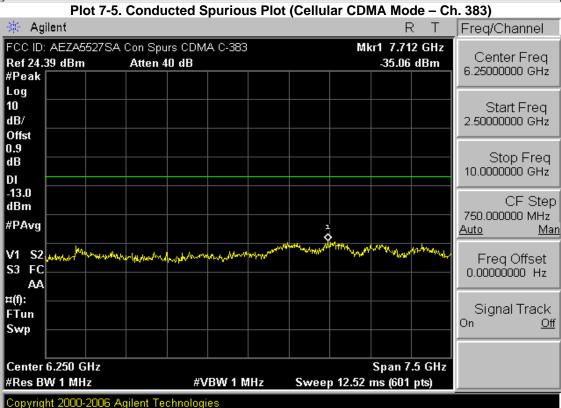


Plot 7-4. 4MHz Span Plot (Cellular CDMA Mode – Ch. 1013)

FCC ID: AEZA5527SA	PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 18 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		rage 10 01 20



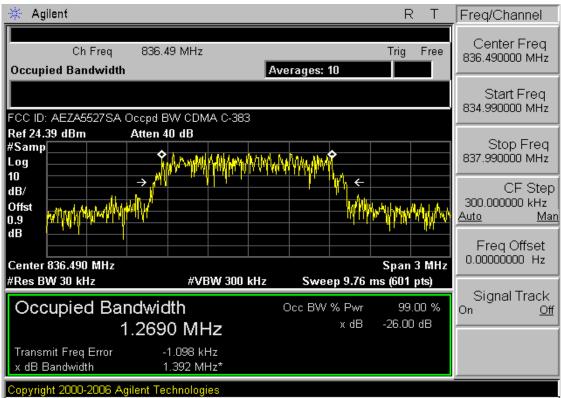




Plot 7-6. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 383)

FCC ID: AEZA5527SA	PCTEST.	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 19 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 19 01 20

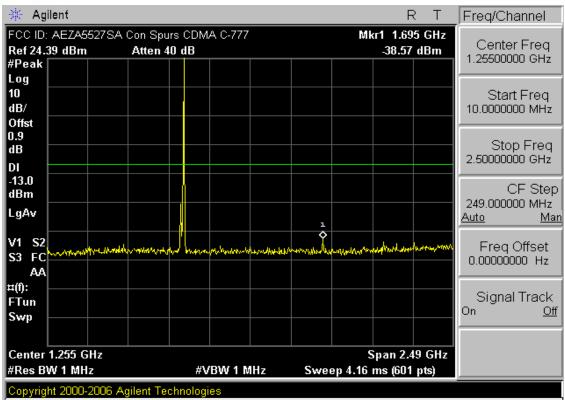


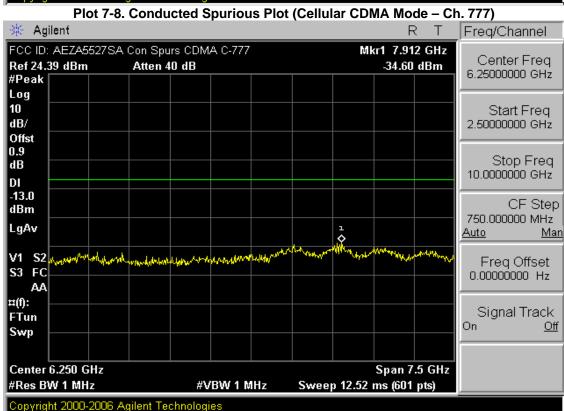


Plot 7-7. Occupied Bandwidth Plot (Cellular CDMA Mode - Ch. 383)

FCC ID: AEZA5527SA	PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 20 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 20 01 20



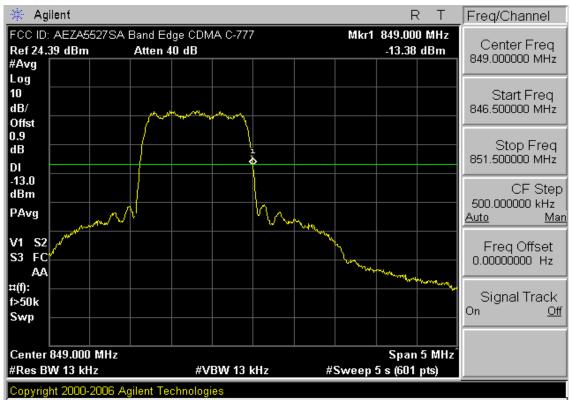




Plot 7-9. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)

FCC ID: AEZA5527SA	PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 21 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Faye 21 01 20







Plot 7-11. 4MHz Span Plot (Cellular CDMA Mode – Ch. 777)

FCC ID: AEZA5527SA	PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 22 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 22 01 20



8.0 CONCLUSION

The data collected show that the **Sanyo Cellular CDMA Phone FCC ID: AEZA5527SA** complies with all the requirements of Parts 2, and 22 of the FCC rules.

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 23 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 23 01 20



EXHIBIT A - TEST SETUP PHOTOGRAPHS

FCC ID: AEZA5527SA	PCTEST:	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 24 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 24 01 20



EXHIBIT B - INTERNAL PHOTOGRAPHS

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 25 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Faye 23 01 20



EXHIBIT C - EXTERNAL PHOTOGRAPHS

FCC ID: AEZA5527SA	PCTEST	FCC Pt. 22 Cellular CDMA MEASUREMENT REPORT (CERTIFICATION)	SANYO	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 26 of 26
0702230103.AEZ	February 28, 2007	Cellular CDMA Phone		Fage 20 01 20